

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Keiichi CHONO

Title: METHOD AND DEVICE FOR ENCODING MOVING
PICTURE USING REFERENCE FREQUENCY OF
REFERENCE FRAME

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Examiner: Rogers, Scott A.

Art Unit: 2625

Confirmation Number: 8745

INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §1.56

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith on Form PTO/SB/08 is a listing of documents known to Applicant in order to comply with Applicant's duty of disclosure pursuant to 37 CFR §1.56.

A copy of each non-U.S. patent document and each non-patent document is being submitted to comply with the provisions of 37 CFR §1.97 and §1.98.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicant does not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* art reference against the claims of the present application.

TIMING OF THE DISCLOSURE

The listed documents are being submitted in compliance with 37 CFR §1.97(d), before payment of the issue fee.

RELEVANCE OF EACH DOCUMENT

The documents listed on the attached PTO/SB/08 were cited as being relevant during the prosecution of the corresponding Japanese application. A copy of the Japanese Office Action dated July 7, 2010 is attached herewith. A partial English translation of the Japanese Office Action follows:

Claims: 1 to 18

Citations: D1 and D2

Remarks:

As to an assignment procedure of reference index numbers in a coding process of H.26L, D1 describes "*the method for assigning a reference index number can be changed on a picture-by-picture basis or a slice-by-slice basis. In the method for assigning a reference index number is, for example, a small number may be assigned to a picture far in display order, however, such a reference index is used, for example, when coding efficiency is improved by referring to the picture far in display order. In other words, since reference indices in a block are presented by variable length code words and data with shorter lengths are assigned to the indices of the smaller values, by assigning smaller reference index to the reference picture which improves coding efficiency if it is referred to, the amount of codes in reference indices is reduced and further coding efficiency is improved.*" (see, page 16, lines 9 to 19).

As illustrated in the above description, the encoding process described in D1 assigns a smaller reference index to a picture which improves coding efficiency when it is referred to.

As to selection of a reference frame of H.26L, D2 describes "*Differing from the conventional motion picture coding, H.26L can select an arbitral picture from a plurality of pictures as a forward reference picture. FIG. 16 illustrates an example of the conventional prediction method using a plurality of reference pictures. Assuming that a target picture including a target block of coding is frame i, the coded block of frame i selects an adequate picture (i.e., picture having high similarity with the target block with respect to pixels) from arbitral pictures of frame i-5, frame i-4, frame i-3, frame i-2 and frame i-1, which have been encoded before frame i, as a reference picture, and selects a block including a pixel having the highest similarity in the selected reference picture as a reference block. Since the difference value between the selected reference block and the target block is coded, the compression efficiency is improved more when the difference value is smaller. Therefore, the compression ratio is improved more in case of H.26L which selects a reference picture from a plurality of pictures than the case such as the conventional art in which only one picture just before is referred.*" (see, paragraph [0007]).

From the above description, a technical concept is recognized that it is possible to improve the coding efficiency by using a frame having a high similarity as a reference frame.

Those skilled in the art could easily adopt the technical concept of D2 to the coding process of D1 to assign a smaller reference index to a frame having a higher similarity.

Therefore, those skilled in the art could easily make the invention defined in claims 1 to 18 of the present application on the basis of the disclosures of D1 and D2.

List of the Citations:

D1: WO03/090473

D2: JP-A-2003-189313

Document JP 2003-189313 listed in the Office Action was previously cited in an Information Disclosure Statement filed December 29, 2005.

Document B1 is a U. S. counterpart of document B2.

Applicant respectfully requests that each listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

STATEMENT

The undersigned hereby states in accordance with 37 CFR §1.97(e)(1) that each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three (3) months prior to filing of this Statement.

The undersigned hereby states in accordance with 37 CFR §1.704(d) that each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart application and that this communication was not received by any individual designated in 37 CFR §1.56(c) more than thirty days prior to the filing of the information disclosure statement.


FEE

Fees in the amount of \$180.00 to cover the fee associated with an information disclosure statement under 37 CFR §1.97(d) are being paid by credit card via EFS-Web.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this submission under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

Respectfully submitted,

Date August 5, 2010

By 

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